blocks, etc., is within the range between 95 percent (5 percent underload) and 110 percent (10 percent overload) of the actual true total load. Such accuracy shall be required over the range of daily operating variables reasonably anticipated under the conditions of use.

(iii) The device shall enable the operator to decide before making any lift that the load indicating device or alternative device is operative. In the alternative, if the device is not so mounted or attached and does not include such means of checking, it shall be certified by the manufacturer to remain operative for a specific time. The device shall be checked for accuracy, using known values of the load, at the time of every certification survey (see §1918.11) and at such additional times as may be recommended by the manufacturer.

(iv) When the load indicating device or alternative device is so arranged in the supporting system (crane structure) that its failure could cause the load to be dropped, its strength shall not be the limiting factor of the supporting system (crane structure).

(v) Units of measure in pounds or both pounds and kilograms (or other indicators of measurement, such as colored indicator lights), capacity of the indicating system, accuracy of the indicating system, and operating instructions and precautions shall be conspicuously marked. If the system used provides no readout but automatically ceases crane operation when the rated load limit is reached under any specific condition of use, the marking shall provide the make and model of the device installed, a description of what it does, how it is operated, and any necessary precautions regarding the system. All of these markings shall be readily visible to the operator.

(vi) All load indicating devices shall operate over the full operating radius. Overall accuracy shall be based on actual applied loads and not on full scale (full capacity) load.

NOTE TO PARAGRAPH (f)(1)(vi): If the accuracy of the load indicating device is based on full scale loads and the device is arbitrarily set at plus or minus 10 percent, it would accept a reading between 90,000 and 110,000 lbs. at full capacity for a machine with a maximum rating of 100,000 lbs. but would also show a reading of between zero and 20,000 lbs. at that outreach (radius) at which the load would be 10,000 lbs.; this is clearly unacceptable. If, however, the accuracy of the device is based on actual applied loads under the same conditions, the acceptable range would remain the same with the 100,000-lb. load but would show a figure between 9,000 and 11,000 lbs. at the 10,000-lb. load; this is an acceptable reading.

(vii) When a load-indicating device uses the radius as a factor in its use or in its operating indications, the indicated radius (which may be in feet and/or meters, or degrees of boom angle, depending on the system used) shall be within the range between 97 percent and 110 percent of the actual (true) radius. When radius is presented in degrees, and feet or meters are required for necessary determinations, a conversion chart shall be provided.

(viii) The load indicating device requirements of this paragraph do not apply to a crane:

(A) Of the trolley equipped bridge type while handling containers known to be and identified as empty, or loaded, and in either case according to the provisions of §1918.85(b) of this part, or while hoisting other lifts by means of a lifting beam supplied by the crane manufacturer for the purpose and in all cases within the crane rating;

(B) While handling bulk commodities or cargoes by means of clamshell bucket or magnet;

(C) While used to handle or hold hoses in connection with transfer of bulk liquids, or other hose-handled products; or

(D) While the crane is used exclusively to handle cargo or equipment whose total actual gross weight is marked on the unit or units hoisted, and the total actual gross weight never exceeds 11,200 lbs., and the load is less than the rated capacity of the crane at the maximum outreach possible at the time.

(2) [Reserved]

[62 FR 40202, July 25, 1997, as amended at 65 FR 40945, June 30, 2000]

§1918.67 Notifying the ship's officers before using certain equipment.

(a) The employer shall notify the officer in charge of the vessel before

bringing aboard ship internal combustion or electric powered tools, equipment or vehicles.

(b) The employer shall also notify the officer in charge of the vessel before using the ship's electric power for the operation of any electric tools or equipment.

§ 1918.68 Grounding.

The frames of portable electrical equipment and tools, other than double insulated tools and battery operated tools, shall be grounded through a separate equipment conductor run with or enclosing the circuit conductors.

§ 1918.69 Tools.

(a) *General.* Employers shall not issue or permit the use of visibly unsafe tools.

(b) *Portable electric tools.* (1) Portable hand-held electric tools shall be equipped with switches of a type that must be manually held in a closed position in order to operate the tool.

(2) All portable, power-driven circular saws shall be equipped with guards above and below the base plate or shoe. The upper guard shall cover the saw to the depth of the teeth, except for the minimum arc required to permit the base to be tilted for bevel cuts. The lower guard shall cover the saw to the depth of the teeth, except for the minimum arc required to allow proper retraction and contact with the work. When the tool is withdrawn from the work, the lower guard shall automatically and instantly return to the covering position.

[62 FR 40202, July 25, 1997, as amended at 65 FR 40946, June 30, 2000]

§§ 1918.70–1918.80 [Reserved]

Subpart H—Handling Cargo

§ 1918.81 Slinging.

(a) Drafts shall be safely slung before being hoisted. Loose dunnage or debris hanging or protruding from loads shall be removed.

(b) Cargo handling bridles, such as pallet bridles, which are to remain attached to the hoisting gear while hoisting successive drafts, shall be attached by shackles, or other positive means shall be taken to prevent them from being accidentally disengaged from the cargo hook.

(c) Drafts of lumber, pipe, dunnage and other pieces, the top layer of which is not bound by the sling, shall be slung in a way that prevents sliders. Double slings shall be used on unstrapped dunnage, unless, due to the size of hatch or deep tank openings, using them is impracticable.

(d) Case hooks shall be used only with cases designed to be hoisted by these hooks.

(e) Bales of cotton, wool, cork, wood pulp, gunny bags or similar articles shall not be hoisted by straps unless the straps are strong enough to support the weight of the bale. At least two hooks, each in a separate strap, shall be used.

(f) Unitized loads bound by bands or straps may be hoisted by the banding or strapping only if the banding or strapping is suitable for hoisting and is strong enough to support the weight of the load.

(g) Additional means to maintain the unitized loads during hoisting shall be employed to ensure safe lifting of such loads having damaged banding or strapping.

(h) Loads requiring continuous manual guidance during handling shall be guided by guide ropes (tag lines) that are long enough to control the load.

(i) No draft shall be hoisted unless the winch or crane operator(s) can clearly see the draft itself or see the signals of a signalman who is observing the draft's movement.

(j) Intermodal containers shall be handled in accordance with § 1918.85.

(k) The employer shall require that employees stay clear of the area beneath overhead drafts or descending lifting gear.

(l) The employer shall not permit employees to ride the hook or the load, except as provided for in § 1918.85(g).

§ 1918.82 Building drafts.

(a) Drafts shall be built or means shall be taken to prevent cargo from falling from them.

(b) Buckets and tubs used in handling bulk or frozen cargo shall not be loaded above their rims.